

In the Claims:

- 1 1. (original) A hard sintered body indexable insert in which  
2 a hard sintered body that contains cubic boron nitride by  
3 20 vol % or more is brazed to a seating groove formed at a  
4 corner of a tool substrate, and a ridge of the hard  
5 sintered body is used as a cutting edge, the hard sintered  
6 body indexable insert characterized in that at least a pair  
7 of hard sintered bodies or composite hard sintered bodies  
8 are disposed on upper and lower surfaces in a thickness  
9 direction of the hard sintered body indexable insert; a  
10 thickness of a part of the tool substrate between the pair  
11 of seating grooves is within a range of 30% to 90% with  
12 respect to a thickness of the hard sintered body indexable  
13 insert; a length of a cutting edge of the hard sintered  
14 body or of the composite hard sintered body is within a  
15 range of 0.5 mm to 4.0 mm; and a bonding layer that has  
16 been brazed contains 0.5 to 65 wt % Ti and/or Zr and  
17 further contains Cu.
- 1 2. (original) The hard sintered body indexable insert as  
2 recited in Claim 1, wherein the hard sintered body or the  
3 composite hard sintered body is 0.8 mm to 1.6 mm in  
4 thickness per piece.

Claims 3 to 7 (canceled).

1 8. (withdrawn) A manufacturing method for manufacturing the  
2 hard sintered body indexable insert according to claim 1,  
3 the manufacturing method comprising:

4 a step of preparing a paste-like brazing alloy by  
5 mixing a powdery brazing alloy that contains 0.5 to 65 wt  
6 % Ti and/or Zr and that further contains Cu with an organic  
7 binder;

8 a step of bonding the hard sintered body or the  
9 composite hard sintered body to a seating groove of the  
10 upper surface of the tool substrate through the paste-like  
11 brazing alloy and thereafter temporarily fastening the hard  
12 sintered body or the composite hard sintered body by  
13 evaporating a solvent component of the organic binder;

14 a step of bonding the hard sintered body or the  
15 composite hard sintered body to a seating groove of the  
16 lower surface of the tool substrate through the paste-like  
17 brazing alloy and thereafter temporarily fastening the hard  
18 sintered body or the composite hard sintered body by  
19 evaporating the organic binder; and

20 a step of brazing and fixing the hard sintered body  
21 indexable insert in which the hard sintered body or the  
22 composite hard sintered body is bonded to tool substrate in  
23 a vacuum or in an inert gas atmosphere.

1 9. (withdrawn) The manufacturing method as recited in Claim 8,  
2 wherein the brazing alloy contains 20 wt % to 30 wt % Ti  
3 and 20 wt % to 30 wt % Zr, and the remainder of Cu and  
4 inevitable impurities.

1 10. (withdrawn) The manufacturing method as recited in Claim 8,  
2 wherein the brazing alloy contains 0.5 wt % to 20 wt % Ti  
3 and/or Zr, 10 wt % to 40 wt % Cu, and the remainder of Ag  
4 and inevitable impurities.

1 11. (withdrawn) The manufacturing method as recited in Claim 8,  
2 wherein the brazing alloy contains 0.5 wt % to 10 wt % Ti  
3 and/or Zr, 5 wt % to 20 wt % In, 15 wt % to 35 wt % Cu, and  
4 the remainder of Ag and inevitable impurities.

19 Claim 12 (canceled).

1 13. (withdrawn) The hard sintered body indexable insert as  
2 recited in Claim 1, wherein the hard sintered body is  
3 bonded directly to the tool substrate through the bonding  
4 layer.

1 14. (previously presented) The hard sintered body indexable  
2 insert as recited in Claim 1, wherein the bonding layer  
3 contains 20 wt % to 30 wt % Ti and 20 wt % to 30 wt % Zr,  
4 and the remainder of Cu and inevitable impurities.

1 15. (withdrawn) The hard sintered body indexable insert as  
2 recited in Claim 1, wherein the bonding layer contains 0.5  
3 wt % to 20 wt % Ti and/or Zr and contains 10 wt % to 40 wt  
4 % Cu and the remainder of Ag and inevitable impurities.

1 16. (withdrawn) The hard sintered body indexable insert as  
2 recited in Claim 1, wherein the bonding layer contains 0.5  
3 wt % to 10 wt % Ti and/or Zr, and contains 5 wt % to 20 wt  
4 % In and 15 wt % to 35 wt % Cu, and the remainder of Ag and  
5 inevitable impurities.

1 17. (withdrawn) The hard sintered body indexable insert as  
2 recited in Claim 1, wherein on a surface of the hard  
3 sintered body indexable insert, there is formed a coating  
4 layer comprising at least one element selected from the  
5 group consisting of elements belonging to groups IVa, Va,  
6 VIa in the periodic table and elements Al, Si, and B, or at  
7 least one compound selected from the group consisting of  
8 nitride, carbide, or oxide of at least one metal selected  
9 from this group, and their solid solutions.

1 18. (withdrawn) The manufacturing method as recited in Claim 8,  
2 further comprising a step of forming, on a surface of the  
3 hard sintered body indexable insert, a coating layer  
4 comprising at least one element selected from the group  
5 consisting of elements belonging to groups IVa, Va, VIa in  
6 the periodic table and elements Al, Si, and B, or at least  
7 one compound selected from the group of nitride, carbide,  
8 or oxide of at least one metal selected from this group,  
9 and their solid solutions, according to a physical vapor  
10 deposition method or according to a chemical vapor  
11 deposition method.

1 19. (new) An indexable tool insert comprising:

2 a tool substrate having two opposite major surfaces  
3 with a total substrate thickness perpendicularly  
4 therebetween, and first and second seating recesses that  
5 are respectively recessed into said opposite major surfaces  
6 at two corners of said indexable tool insert, with a  
7 remaining portion of said tool substrate remaining between  
8 said first and second seating recesses, wherein said  
9 remaining portion of said tool substrate between said first  
10 and second seating recesses has, perpendicular to said  
11 major surfaces, a remaining thickness of 30% to 90% of said  
12 total substrate thickness;

13 first and second sintered body members that each  
14 contain at least 20 vol.% of cubic boron nitride, that each  
15 have a ridge forming a cutting edge having a length of 0.5  
16 mm to 4.0 mm, and that are respectively arranged in said  
17 first and second seating recesses; and

18 a respective brazed bonding layer that respectively  
19 secures said first and second sintered body members to said  
20 tool substrate in said first and second seating recesses,  
21 wherein said brazed bonding layer contains Cu and 0.5 wt.%  
22 to 65 wt.% of Ti and/or Zr.

1 20. (new) The indexable insert according to claim 19, wherein  
2 each said sintered body member is a respective integral  
3 hard sintered body.

1 21. (new) The indexable insert according to claim 19, wherein  
2 each said sintered body member is a composite member  
3 including a hard sintered body and a cemented carbide  
4 support.

1 22. (new) The indexable insert according to claim 19, wherein  
2 said brazed bonding layer consists of 20 wt.% to 30 wt.% of  
3 Ti, 20 wt.% to 30 wt.% of Zr, and a remainder of Cu and  
4 inevitable impurities.

1 23. (new) The indexable insert according to claim 19, wherein  
2 said remaining thickness of said remaining portion is from  
3 32.8 % to 87.3 % of said total substrate thickness.

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